

REMARKS

Claims 1-7 are pending. The title of the invention has been amended to be more descriptive. No new matter has been added by way of the above-amendment.

Specification

The Examiner objects to the title of the invention for not being descriptive. In response, Applicants have amended the title of the specification as follows: "ELECTRIC DOUBLE LAYER CAPACITOR WITH POLARIZABLE ELECTRODES CONTAINING ACTIVATED CARBON". As such, withdrawal of the objection is respectfully requested.

Claim Objections

The Examiner objects to claim 2 for reciting the term "the ionic liquid" at line 2 for allegedly lacking antecedent basis. In response, Applicants respectfully direct the Examiner's attention to the fact that the term "the ionic liquid" in claim 2 has antecedent basis in the last line of claim 1. As such, withdrawal of the objection is respectfully requested.

Issues Under 35 U.S.C. § 103

The following prior art based rejections are pending:

- (a) Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO03/091198 hereafter referred to as Yuyama in view of Oyama et al. (US 5,891,833);
- (b) Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO2004/019356 hereinafter referred to as Sato in view of Yuyama; and
- (c) Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1536440 hereinafter referred to as Sato 'EP in view of Yuyama.

Applicants respectfully traverse Rejections (a)-(c).

(a) Yuyama in view of Oyama

A feature of the inventive capacitor resides in polarizable electrodes composed primarily of activated carbon having micropores with a pore radius distribution peak as determined by the MP method in a range of 5.0×10^{-10} to 1.0×10^{-9} m, and electrolyte including at least an ionic liquid in a concentration of more than 2.0 mol/L.

The inventive capacitor, having the above feature, has an excellent rate capability and has excellent charge-discharge characteristics at low temperatures, in addition to which the internal impedance at low temperatures can be lowered.

The Examiner asserts that Yuyama discloses an electric double layer capacitor comprising an electrolyte including at least an ionic liquid in a concentration of more than 2.0 mol/L. The Examiner cites to page 14, line 19 to page 15, line 5 of WO 03/091198.

The Examiner will note that US 7,167,353 is in the same patent family as WO 03/091198. The section of WO 03/091198 cited by the Examiner (page 14, line 19 to page 15, line 5) corresponds to column 9 line 65 to column 10 line 3 in US 7,167,353 which is repeated below for the Examiner's convenience:

In the organic solution containing one or more ionic compound, if the ionic compound in the solution is not an ionic liquid, no particular limitation is imposed on the concentration of the compound, although concentration of 0.1 to 5.0 mol/L, and especially 1.0 to 4.0 mol/L, is preferred. (See column 9 line 65 to column 10 line 3 in US 7,167,353, emphasis added.)

As shown above, it is clear that Yuyama treats ionic compounds differently than ionic liquids. This section referred to by the Examiner refers to the concentration of the ionic compounds, **not** the ionic liquids as asserted by the Examiner. Yuyama fails to teach the concentration of ionic liquids.

Applicants therefore consider that the Examiner has misread the above description.

In addition, Yuyama only teach the concentration of ionic liquid of 1.0 M in Examples. (Cf. Column 15 lines 61-65 in US 7,167,353).

That is, even though the activated carbon of Oyama is used in the capacitor of Yuyama, those skilled in the art cannot arrive at the inventive capacitor.

Moreover, as shown in Table 2 in the specification, the retention of cycle of Examples 4, 5, 6 is superior to Comparative Example 4 including an ionic liquid in concentration of 1.5 M. Table 2 is reproduced (in part) below for the Examiner's convenience.

Table 2 (In part)

	Activated carbon No.	Electrolyte		Cell No.	Cycle characteristics (%)
		Electrolyte salt	Concentration (mol/L)		
Inv Ex 4	2	Compound 2	2.2	4	89
Inv Ex 5	2	Compound 2	3.0	5	88
Inv Ex 6	2	Compound 2	100%	6	91
Comp Ex 4	2	Compound 2	1.5	14	74

As is apparent from Table 2, the retention of cycle characteristics rose as the concentration of ionic liquid in the electrolyte became higher. It was thus apparent that the durability improves at higher concentrations of the ionic liquid.

Accordingly, those skilled in the art would find the inventive capacitor and advantageous effect thereof *unexpected* based on the teachings of Yuyama and Oyama. As such, withdrawal of Rejection (a) is respectfully requested.

(b) Sato in view of Yuyama

With respect to Rejection (b), Sato is available under 35 U.S.C. § 103(a) based on 35 U.S.C. §102(a). This reference was published **April 3, 2004** which is less than one year prior to the instant priority date, February 1, 2005. As such, Applicants now antedate Sato by filing a verified English translation of the instant priority document 2004/026456 which was filed in Japan on **February 3, 2004**. Please note that the presently claimed invention has adequate

written description support in JP 2004/026456 and the presently claimed invention is **fully enabled** by the disclosure in JP 2004/026456.

As such Rejection (b) is rendered moot.

(c) Sato EP' in view of Yuyama

With respect to Rejection (c), Applicants note that Sato 'EP (EP 1536440) is not prior art to the instant invention. Sato 'EP is only available based on its publication date of June 1, 2005. However, the present application has an effective U.S. filing date of February 1, 2005. Accordingly, this rejection is rendered moot.

Obviousness/Type Double Patenting

Claims 1 and 4-6 are rejected for non-statutory obviousness-type double patenting as being unpatentable over claims 1 and 3-4 of U.S. Patent No. 7,342,769 ("US '769") in view of Yuyama.

In response, Applicants co-file herewith a Terminal Disclaimer (TD) over US '769.

In legal principle, the filing of a TD simply serves the statutory function of removing the rejection of obviousness-type double patenting, and does not raise a presumption on the merits of the rejection. It is improper to view the simple expedient of "obviation" as an admission or acquiescence on the merits. *Ortho Pharmaceutical Corp. v. Smith*, 22 USPQ2d 1119, 1124 (Fed. Cir. 1992) citing *Quad Envtl. Technologies Corp. v. Union Sanitary Dist.*, 946 F.2d 870, 874, 20 USPQ2d 1392, 1394-95 (Fed. Cir. 1991).

Based on the foregoing, the obviousness-type double patenting rejection is rendered moot.

In view of the above amendment, applicant believes the pending application is in condition for allowance.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Garth M. Dahlen, Ph.D., Reg. No.

43,575, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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Attachments: 1) Verified English translation of the instant priority document 2004/026456
2) Terminal Disclaimer over U.S. Patent No. 7,342,769